

CO4.1: Teenage suicide (15-19 years old)

Definitions and methodology

Teenage suicide rates are calculated as the total number of deaths due to intentional self-harm for the population between 15-19 years old in a given year, divided by the total population of 15-19 years old for each country in that given year, and multiplied by a factor of 100 000. The result is expressed in units of deaths per 100 000 individuals (aged 15 - 19) per year.

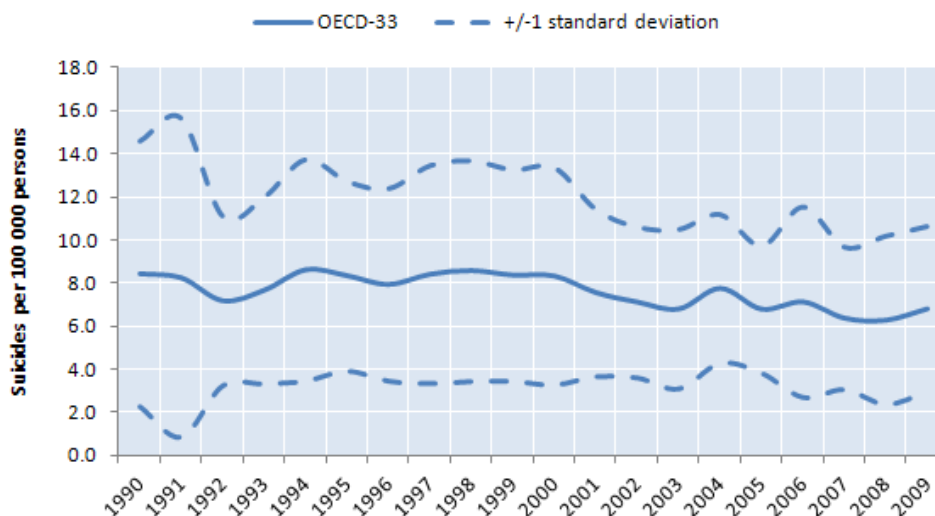
Key Findings

Between 1990 and 2009, the OECD experienced a small decline in teenage suicide rates. While in 1990, on average, 8.4 suicides per 100 000 teenagers were observed, in 2008 this rate was 6.2 suicides per 100 000 teenagers. However, a small increase was observed from 2008 to 2009.

Over the 1990-2009 period two distinct trends have emerged. From 1990-2000, the average suicide rate was relatively stable at 8.1 suicides per 100 000 persons. Then, from 2000-2009, suicide rates have been slightly falling averaging 6.9 suicides per 100 000 persons. Moreover, there has been more convergence between countries in the suicide rate from 2000 onwards (as shown by the decrease in the standard deviation, in Chart CO4.1.A).

Chart CO4.1.A: Suicide rates among teenagers have been falling across the OECD

Suicides per 100 000 persons 15-19 years old, OECD-33 average from 1990-2009



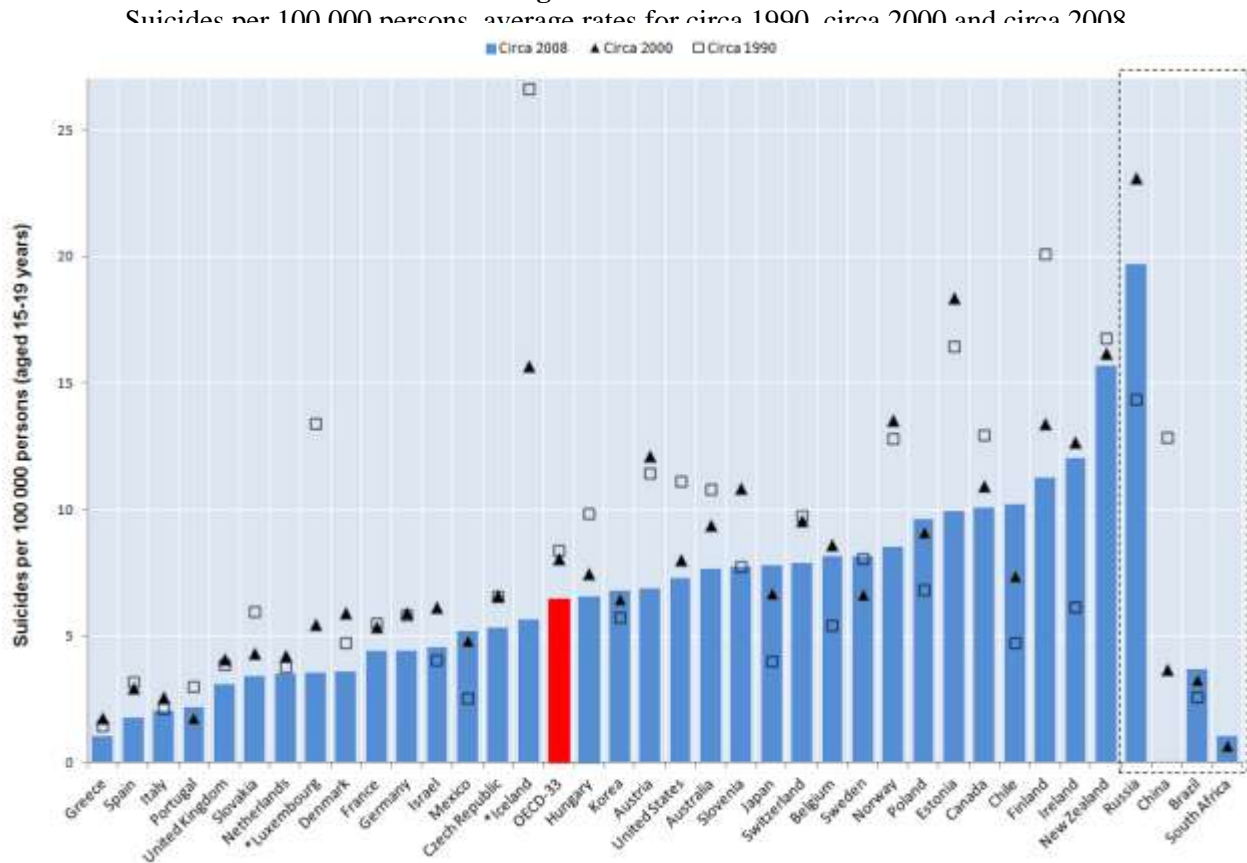
Note: OECD-33 excludes Turkey. Data is missing for Turkey.

Source: WHO (2011), WHO Mortality Database.

Other relevant indicators: CO4.2 Prevalence of smoking; CO4.3 Substance abuse; CO5.3 Young people not in education and employment; and OECD Family database (www.oecd.org/social/family/database) LMF2.7 Subjective well-being

Chart CO4.1.B shows suicide rates for each country for three points in time 1990, 2000 and 2008. Around 2008 the highest suicide rates were observed in Chile, Finland, Ireland and New Zealand with more than 10 suicides per 100 000 teenagers. By contrast, countries with the lowest suicide rates were Greece, Italy, Portugal and Spain with less than 3 suicides per 100 000 teenagers. Most countries with large decreases in the suicide rate are those with historically high suicide rates compared with the OECD average.

Chart CO4.1.B: The largest declines in suicide rates have occurred in countries with historically high-suicide rates.



Note: Countries are ordered in ascending order of most recent data available (circa 2008). Russia, China, Brazil and South Africa are ‘enhanced engagement OECD countries.

Circa rates are taken as three-year or two-year averages depending on data availability. The years considered for each country are as follows; Circa 2008: Japan, Austria, Czech Republic, Estonia, Finland, Greece, Hungary, Iceland, Ireland, Netherlands, Norway, Slovenia, United Kingdom, Portugal (2007-2009); Brazil, Mexico, Israel, France, Poland, Luxembourg, Spain, Sweden (2006-2008); South Africa, Chile, Switzerland, New Zealand (2005-2007); Korea, Denmark, Germany, Russia (2004-2006); Canada, Australia (2002-2004), United States (2005, 2007), Italy (2006, 2007), Slovakia (2008, 2009), Belgium (2004, 2005). Data is missing for Turkey and China.

Circa 2000: All countries 1999-2001, except for China (1999, 2000), United Kingdom (1999, 2001) and Belgium (1998, 1999). Data is missing for Turkey.

Circa 1990: All countries 1989-1991, except for Germany (1990-1992) and Slovakia (1992-1994). Data is missing for Turkey.

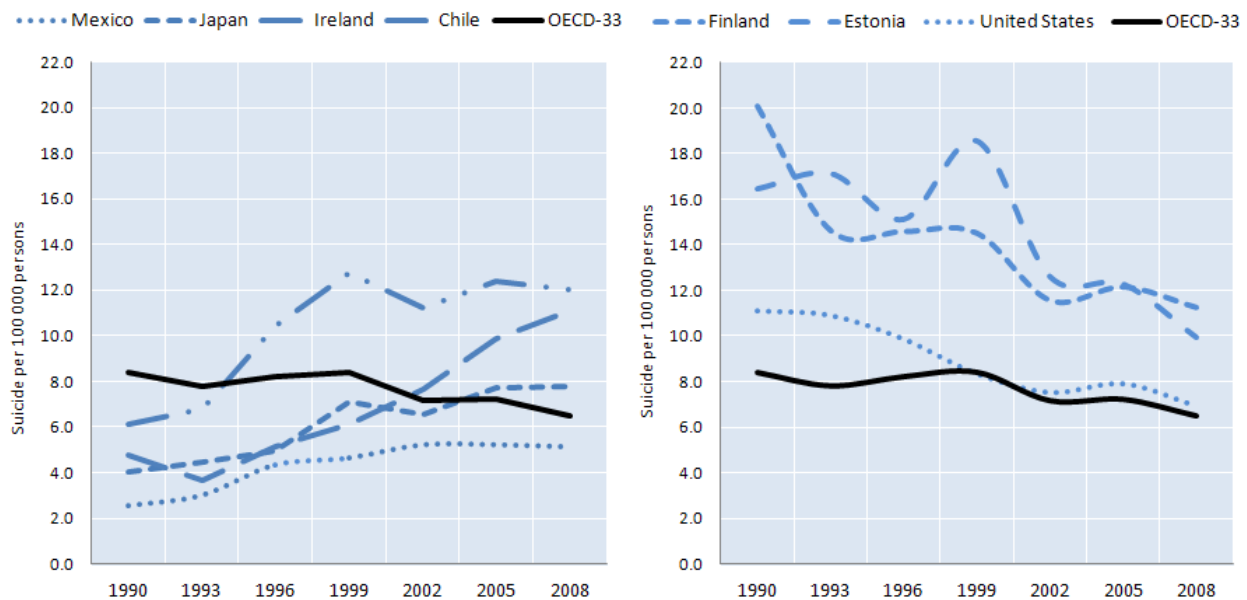
* Due to small population, Iceland and Luxembourg suicide rates are very sensitive to yearly reported data and thus likely to show high variability and outliers across the time series.

Source: WHO (2011), WHO Mortality Database.

Some countries with relatively low rates in the early 1990's have seen an increase in their teenage suicide rates over time. Chart CO4.1.C shows the four countries with the steepest increase in suicide rates, as well as the three countries with steepest decrease in suicide rates since 1990.¹

Increasing suicide rates have been noticeable for Chile, Ireland, Japan and Mexico, although Ireland and Mexico have shown more stable rates from 2000 onwards. Except for Mexico, these countries began the period with rates below the OECD average and ended up with rates above the OECD average in 2008. On the contrary, declining suicide rates have been noticeable for Estonia, Finland and United States. All these countries began the period with rates much above the OECD average and are much closer to the OECD average in 2008.

Chart CO4.1.C: Countries have shown different trends in suicide rates since 1990
 Suicides per 100 000 persons by year, 1990-2008



Note: For presentation purposes, data points are class marks taken as three-year averages from 1990 to 2008.

Source: WHO (2011), WHO Mortality Database.

¹ Although they showed declining rates over time, Iceland, Luxembourg and China were left out of the chart. Iceland and Luxembourg were omitted because of the high sensitivity of its suicide rates (high variability due to small population size) and China was not included as data were missing for 2000.

Comparability and data issues

Suicide rates are calculated using the World Health Organization (WHO) Mortality database.² This database includes deaths registered in national civil registration systems, with underlying causes of death as coded by the relevant national authority. Underlying causes of death are defined as "the disease or injury which initiated the train of morbid events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury" in accordance with the rules of the International Statistical Classification of Diseases and Related Health Problems (ICD).³

The International Statistical Classification of Diseases and Related Health Problems (ICD) provide a cross-national framework for the recording of the causes of death. Different countries use different WHO standard coding systems (ICD 8th, 9th and 10th) at different times (see Chapter 7, *Doing Better for Families*, OECD 2011). For calculation purposes, the following causes of death were classified as suicides⁴:

	ICD 8th	ICD 9th	ICD 10th
Condensed data	A147/B049 (suicide and self-inflicted injury)	B54 (suicide and self-inflicted injury)	1101/UE63 (intentional self-harm)
Detailed data	E950 - E959 (suicide and self-inflicted injury)	E950 - E960 (suicide and self-inflicted injury)	X600 - X840 (intentional self-harm)

For the data presented here, **validity** tests were performed to assess potential comparability problems related to different ICD systems over time. The procedure showed no significant breaks in series (trends) because of changing ICD codification formats, so the data deemed comparable.

Nevertheless, the comparability of suicide data between countries could be affected by a number of reporting criteria, including: the establishment of a person's intention to kill him or herself, the authority responsible for completing the death certificate, the need to carry out a forensic examination of the corpse, and possible provisions on the confidentiality on the cause of death. It is sometimes argued that stigmatization may affect reliability of data on suicides. Suicide data should thus be interpreted with care, although comparability and reliability issues should not be exaggerated. Some studies conclude that despite reporting issues suicide rates are comparable across countries (Jouglu et al., 2002).

Population data was taken from the WHO Reference Populations database. In case data was not available for a particular country, relevant population data was taken from the United Nations World Population Prospects Revision 2010.

Availability of data for suicide and self intentional harm as a cause of death varies across countries and time series. Overall, more data is available for 1990's, while there is less for 1980's and

² The database is available at <http://www.who.int/whosis/mort/download/en/index.html>

³ For detailed information about ICD system, please refer to <http://www.who.int/classifications/icd/en/>

⁴ For more details, please refer to <http://www.who.int/classifications/icd/en/index.html>

2000's. Less data availability for 1980's could be due to fewer national statistics compilation processes in countries. In the case of 2000's, data gaps are mainly due to typical updating processes, which are slower for worldwide-statistics like the ones compiled by the WHO.⁵ A brief summary of the countries for which data is not available:

- 1980's: South Africa, China, Korea, Czech Republic, Germany, Slovakia and Slovenia;
- 1990's: South Africa;
- 2000's: Canada, China, Belgium, Italy and Australia.

Finally, there are some special considerations for estimating suicide rates for China, Iceland , Luxembourg and Turkey:

- China: the mortality data was reported only for “selected urban/rural areas”. The WHO Reference Populations database has data for China for years 1987-2000, where it was possible to estimate the rates. For other years, it was not possible to complete the corresponding population data.
- Turkey: the mortality data was reported for some “reporting areas”. However, the WHO Reference Populations database does not have population data for Turkey. Hence, it was not possible to complete the corresponding population data.
- Iceland and Luxembourg: the population shares of 15-19 year olds in these countries is quite small compared to other countries. This means that suicide rates can vary sharply over time.

Sources and further reading: WHO mortality database (2011); Society at a Glance (2009); Jougl E, Pequignot F, Chappert JL, et al. (2002), «La qualite des donnees de mortalite sur le suicide» Revue Epidemiologie et de Sante Publique; Vol. 50, pp:49–62. ; Sainsbury P. and J.S. Jenkins (1982): "The accuracy of officially reported suicide statistics for purposes of epidemiological research", Journal of Epidemiology and Community Health, 36: 43-48.

⁵ Indeed, the last version of WHO Mortality Database (updated March 25th 2011) has gaps on data for 2008-2009. For out of 37 countries analyzed, just 16 have reported data for 2009, and 23 do so for 2008. This entails some limitations for recognizing most recent trends over suicide rates.